

## **AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Previously Presented) A method for fining a metal surface, comprising a process for forming crystal grains having sizes less than  $1\text{ }\mu\text{m}$  at the surface of a metal product by means of projecting or peening shots or projectiles to the surface while a power per unit of area of the surface is controlled at a predetermined value, wherein the predetermined value is greater than  $11\text{ KJ/sec}\cdot\text{mm}^2$ .

2. (Previously Presented) The method for fining a metal surface according to claim 1, wherein the shots or projectiles are made from high carbon steel, ferrous metallic glass, or stainless steel, and the diameters of the shots or projectiles are  $30\text{ }\mu\text{m}$  to  $2000\text{ }\mu\text{m}$ .

3. (Cancelled).

4. (Previously Presented) The method for fining a metal surface according to claim 1, wherein the process for projecting or peening shots or projectiles to the surface is carried out while the temperature of the metal surface is controlled to be between room temperature and  $-150^{\circ}\text{C}$ .

5-6. (Cancelled).

7. (Previously Presented) A metal product having surfaces hardened by the method for fining a metal surface according to claim 1.

8. (Currently Amended) A method for fining a metal surface, comprising a process for forming crystal grains having sizes less than  $1\text{ }\mu\text{m}$  at the surface of a metal product by means of projecting or peening shots or projectiles to the surface while

a power per unit of area of the surface is controlled at a predetermined value, wherein the unit of area is calculated by multiplying a contact surface of a projectile or a shot by a number of the shots or projectiles.

9. (Currently Amended) The method for fining a metal surface according to claim 8, wherein the unit of area is calculated by subtracting overlapped areas that are calculated based on the number of shots or projectiles that have their contact surfaces overlap from a sum of the contact surfaces.

10. (Currently Amended) The method for fining a metal surface according to ~~claim~~claim 8 or 9, wherein the shots or projectiles are made from high carbon steel, ferrous metallic glass, or stainless steel, and the diameters of the shots or projectiles are 30  $\mu\text{m}$  to 2000  $\mu\text{m}$ .

11. (Previously Presented) The method for fining a metal surface according to claim 8 or 9, wherein the process for projecting or peening shots or projectiles to the surface is carried out while the temperature of the metal surface is controlled to be between room temperature and  $-150^{\circ}\text{C}$ .

12. (Previously Presented) A metal product having surfaces hardened by the method for fining a metal surface according to claim 8 or 9.